

Introduction and Review of Requirements Identified in the Acceptance Plan for Operations

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Introduction




- Beam particles for the NSRL will originate from either the Tandem or Linac accelerators, depending upon the need for heavy ions or protons. With either protons or heavy ions, bunched beam will be debunched in the Booster prior to extraction down the NSRL line.
- The debunched beam pulse, up to 1 second in length, travels down the 100 m beam line to the target building, where experimenters will utilize the beam.
- Controls for the beam will be via the Main Control Room.
- Installed safety systems are similar in design to those used for the RHIC.
- Safety systems include beam crash, access control subsystems, radiation monitors and critical devices
- Additional items, such as remote cameras and iris-scanning identity-verification have been added to facilitate frequent experimenter accesses to the target area. These are items previously used with NASA experiments in Building 912.

Schedule

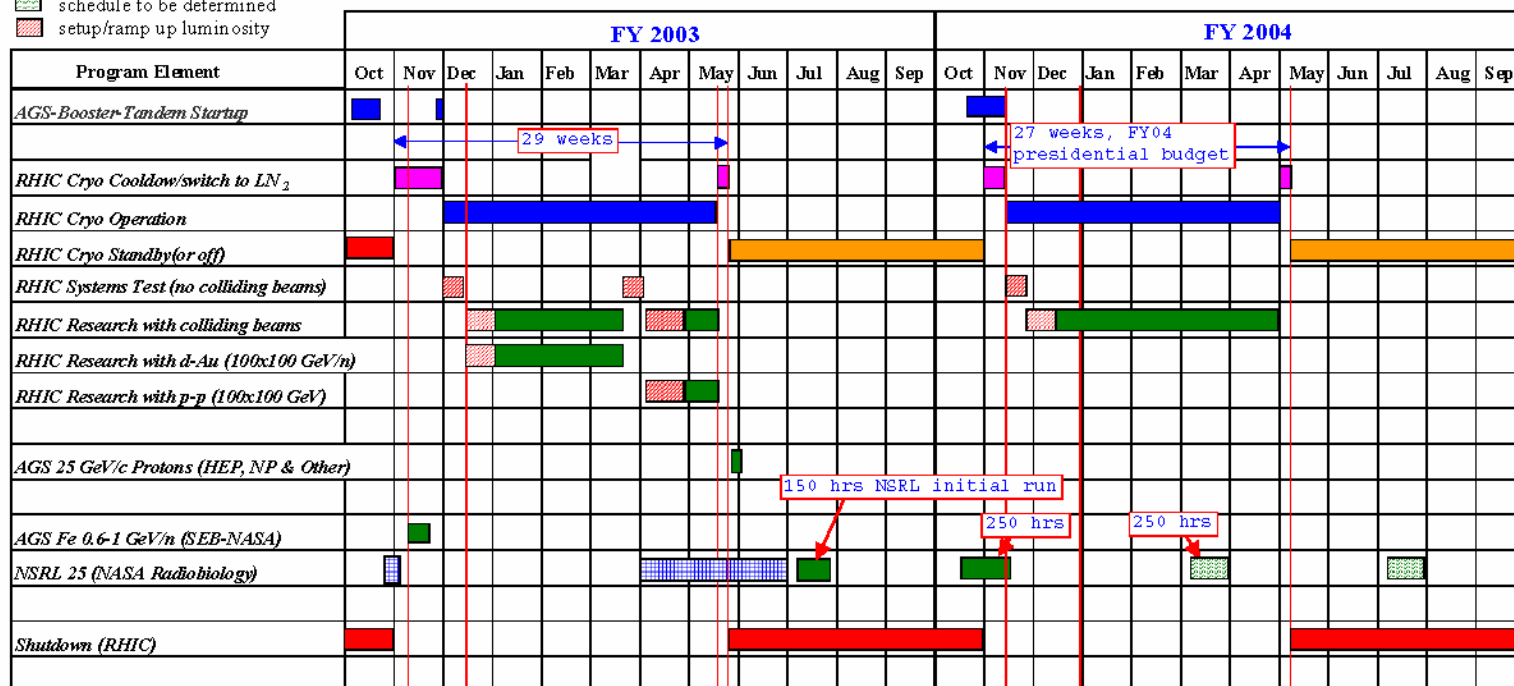
<http://server.c-ad.bnl.gov/esfd>

C-A Operations-FY03-04

9 Apr 03

-  Commissioning
-  schedule to be determined
-  setup/ramp up luminosity

subject to funding etc.



Facilities

The facilities created for the NSRL project include three new buildings:

- An experimental support building (Building 958) that contains laboratory space as well as dosimetry control and communication with the MCR
- A power supply building (Building 957) that contains magnet power supplies and instrumentation electronics for the beam line and associated cooling water systems
- The beam line tunnel, including entry labyrinths, target area and beam stop (Building 956)

NSRL Site



Acceptance Plan Requirements for Routine Operations

- Qualified Operations Staff
- Approved Routine Operating Procedures
- Specific Administrative Controls
- Specific Technical Controls

Required Operations Staff

MCR Operations Coordinator, AD-510 (1 per shift)

MCR Operator, AD-560 (1 per shift)

Tandem Van de Graaff Operator if TVDG is used, AD-012/AD-014 (1 per shift)

C-A Radiological Control Technician, RP-01 and AD-520 (1 per shift)

Collider-Accelerator Support, AD-570 (1 per shift)

Required Procedures

General Safety:

OPM 2.5.3, NSRL Operational Safety Limits/Accelerator Safety Envelope

OPM 2.5.3 NSRL Accelerator Safety Envelope Parameters

Sweep Procedures:

OPM 4.56. Number to be determined, NSRL Line Upstream (Z3) Sweep Checklist

OPM 4.56.bb NSRL Stub Tunnel (Z3) Sweep Checklist

OPM 4.56. Number to be determined, NSRL Line Downstream (Z2) Sweep Checklist

OPM 4.56.bc NSRL Transport Tunnel (Z2) Sweep Checklist

OPM 4.56. Number to be determined, NSRL Experimental Area (Z1) Sweep Checklist

OPM 4.56.bd NSRL Experimental Area (Z1) Sweep Checklist

ALSO

OPM 4.56.be NSRL Berm Sweep Checklist

Required Procedures

Emergency Procedures:

OPM 3. Number to be determined, NSRL Emergency Procedure

OPM 3.0 Local Emergency Plan For the C-A Department (updated)

OPM 3.25 Emergency Procedure for Building 958, NASA Space Radiation Laboratory

Access Control Testing Procedures:

OPM 4. Number to be determined, NSRL line (Peer 27) Security Gate Subsystem Check

OPM 4. Number to be determined, PASS Peer 27 Crash Subsystem Test

OPM 4. Number to be determined, Critical Response Subsystem Checklist for PASS – Peer 27

OPM 4. Number to be determined, Confirmation of Proper System Operation of PASS – Peer 27

OPM 4.120.102 Access Control - Acceptance Tests for NASA Space Radiation Laboratory (NSRL)

OPM 4.120.102.a NASA Space Radiation Laboratory (NSRL) (Peer 27) Critical Device Tests

OPM 4.120.102.b NASA Space Radiation Laboratory (NSRL) (Peer 27) Gate Tests

OPM 4.120.102.c NASA Space Radiation Laboratory (NSRL) (Peer 27) Crash Tests

OPM 4.120.102.d NASA Space Radiation Laboratory (NSRL) (Peer 27) Sweep Tests

OPM 4.120.102.e NASA Space Radiation Laboratory (NSRL) (Peer 27) Mode 24 Tests

OPM 4.120.102.f NASA Space Radiation Laboratory (NSRL) (Peer 27) Chipmunk Tests

OPM 4.120.102.g NASA Space Radiation Laboratory (NSRL) (Peer 27) Power Up Tests

Required Procedures

Experimenter Operating Procedures:

OPM 11. Number to be determined, Operation of Experiment Sample Trolley
Trolley not installed at this time

OPM 11. Number to be determined, Operation of Beam Degradar
Controls are password protected; Liaison Physicist will perform OJT and records will be kept by Training Office

OPM 11. Number to be determined, Operation of Overhead Crane
Controls are locked out; Liaison Physicist will perform OJT and records will be kept by Training Office

Specific Administrative Controls

- Configuration management plan
- Designation of critical devices by the Radiation Safety Committee
- ESH reviews by BNL and C-AD ESH committees
- Environmental management system requirements for the NSRL
- Facility Use Agreements for NSRL facilities
- Fault studies
- Functional tests of the NSRL security system
- Laboratory management approval for NSRL commissioning and operations
- Operational readiness reviews
- R2A2 documents
- Radiation Safety Committee check-off lists
- Experimental Safety Review Committee check-off lists
- Accelerator Systems Safety Review Committee check-off lists
- Radiation Work Permits
- Radiation monitor interlocks and main control room alarms
- Self-assessments, self-evaluations and C-AD management assessments
- Training documentation (BTMS)
- Work planning and work permits

Specific Technical Controls

- C-A Department Conduct of Operations Matrix
- NSRL Commissioning/Acceptance Plan
- NSRL Commissioning and Operations ARR Report
- DOE approvals for NSRL Commissioning and Operations
- DOE approval of NSRL Accelerator Safety Envelope
- NSRL Environmental Assessment and FONSI
- NSRL Safety Assessment Document
- ALARA procedures